



THE POLAR EXPLORING EXPEDITION.



A

SPECIAL MEETING

OF THE

AMERICAN

Geographical & Statistical Society,

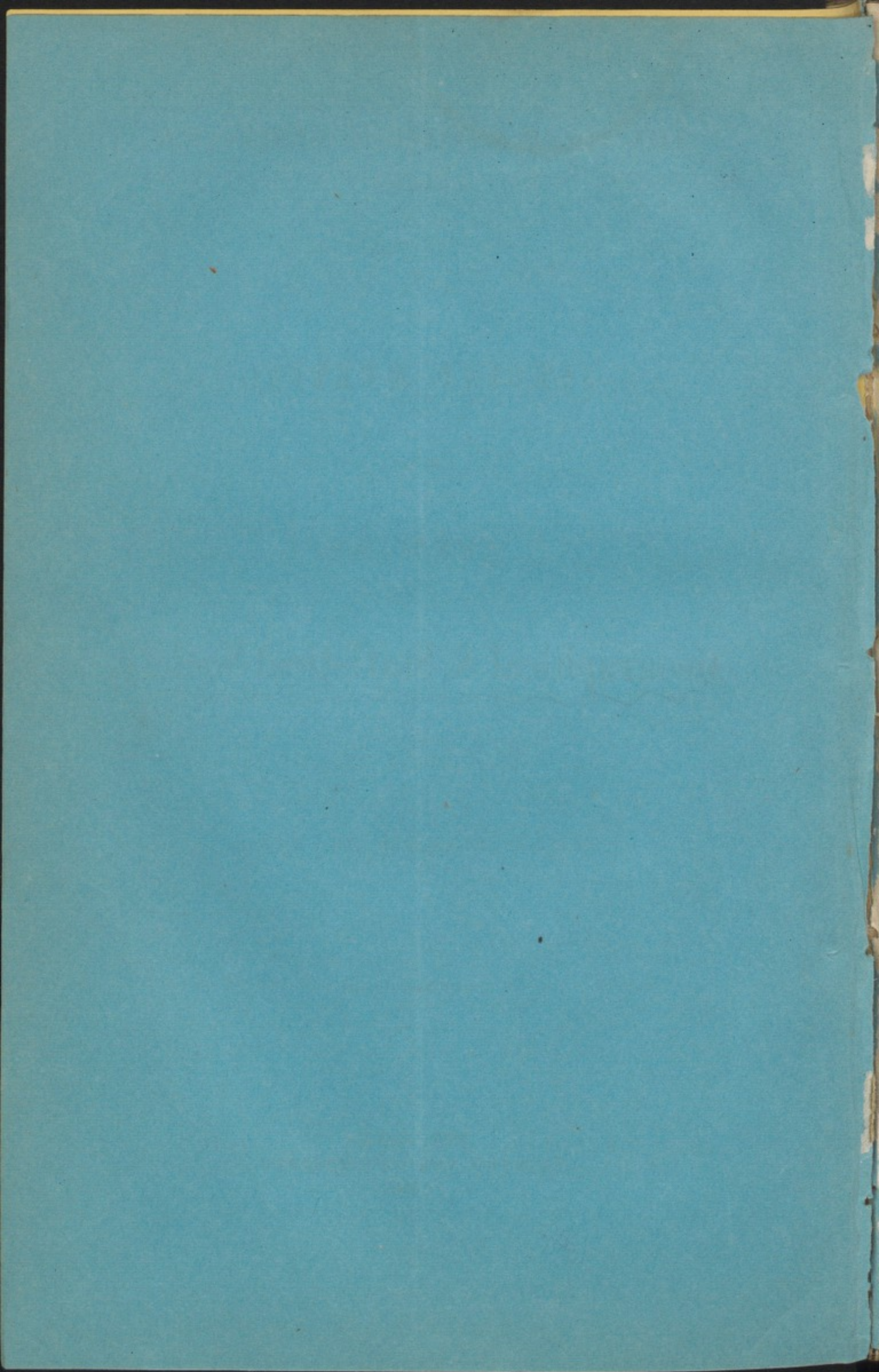
HELD MARCH 22, 1860.



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1860, Nov. 23,
Gift of
Sam. A. Green, M.D.
of Boston,

T H E

POLAR EXPLORING EXPEDITION.

A SPECIAL meeting of the AMERICAN GEOGRAPHICAL AND STATISTICAL SOCIETY, was held in the Hall of the Historical Society, on the evening of Thursday, the twenty-second of March, 1860.

The Honorable GEORGE FOLSOM, one of the Vice-Presidents of the Society, took the Chair.

The General Secretary of the Society then read the following letters,—

FROM PROFESSOR ALEXANDER DALLAS BACHE, LL.D.

WASHINGTON, *March* 21, 1860.

DEAR SIR:

I regret extremely that the public business in my charge must prevent me from attending the meeting called by the American Geographical and Statistical Society, to further the plans of Dr. I. I. HAYES in regard to a new expedition to the Arctic Regions.

The brilliant achievements of Dr. Kane and his remarkable discoveries, have invested the region of Smith's Sound with especial interest, combining the romance of adventure with sober and thorough scientific examination and development. The laborious and successful observations in astronomy, in magnetism, in meteorology, in the tides, in natural history, in general physics, have stamped Dr. Kane's last ex-

pedition with the seal of true science. These, of themselves, would have given him one of the high niches in the temple of fame, had he not already occupied by acclamation a higher, as discoverer of the open Polar Sea. The more this question has been discussed and examined, the more his conclusions have been confirmed; Nature, through her servants of climate and heat, of winds and clouds, of animals and plants, speaking in his behalf.

To crown these investigations and discoveries, Dr. Hayes, who was Kane's companion and medical officer in the last expedition, proposes again to repair to Smith's Sound, and to push his way by a route familiar to him, and with appliances the use of which he has thoroughly studied, to the shore of that great reservoir of the American Gulf Stream—the Polar Sea. Making his home in Greenland, he proposes to avail himself of seasons adapted to Arctic exploration, and of improved means furnished by the advance of science, to push forward the complete solution of this great American geographical problem. With great unanimity the scientific bodies of our country have expressed themselves favorable to this undertaking, and have labored through their members to procure the means and to point out the subjects for investigation.

The harvest which Dr. Kane so successfully reaped is not all reaped; the mowers will yet find abundant materials for their sheaves, the gleaners for their bundles. The subjects of climate and magnetism, the tides and currents, of the aurora, of general physics, are by no means exhausted; and any one of them is worthy of an expedition to determine all its facts. The hardships and risks of such an expedition, the physical sufferings, if they must be encountered, will be well repaid by a position such as, if successful, must place its commander on the roll of fame. Indeed, in a philosophical point of view, one might be willing to exchange a life of ease for death within the polar circle, to occupy a place in men's memories beside that of Elisha Kent Kane.

While Dr. Hayes has the indorsement of men of science throughout the country, and will receive contributions in proportion to the means of the intelligent and wealthy of our cities, it seems particularly appropriate that New York, which has so completely identified itself with the fame and success of previous American Arctic Expeditions, should also lead in this one, and that the American Geographical Society should be the organ of the country in bidding it God speed. May the efforts of the knowledge-loving and liberal citizens

of the great emporium of commerce of America be successful in furnishing to this new enterprise every facility which money can give! The name of one great merchant is immortalized by its connection with the former expeditions. May there be many who will step forward to promote this—to be its Grinnells!

Very respectfully yours,

A. D. BACHE.

DANIEL W. FISKE, Esq.,
Sec. Am. Geo. and Stat. Soc.

FROM PROFESSOR JOSEPH HENRY, LL.D.

SMITHSONIAN INSTITUTION,
WASHINGTON, D. C., *March* 16th, 1860.

DEAR SIR,

It gives me much pleasure to address you, in regard to the proposed expedition to the Arctic Regions by Dr. Hayes, and to assure you that I shall be much gratified to learn that he has been successful in securing an outfit. It is true, that such an expedition cannot be undertaken without the prospect of much personal inconvenience, and perhaps risk of life; but it must be recollected that nothing of great value can be obtained without laborious exertion, and that life is daily periled in thousands of instances for mere pecuniary gain; and that it is proper it should be risked for the more important object of increasing the bounds of human knowledge. That there is a very interesting field of investigation still open to the arctic explorer, must be evident to any one who will attentively study the present condition of science, in regard to this region.

The Smithsonian Institution is now engaged in publishing the observations of Dr. Kane, which have been reduced and discussed by Mr. Schott, of the Coast Survey, at the expense of the Smithsonian fund. The discussions to which they have been subjected, have resulted in a series of deductions relative to the temperature, pressure of atmosphere, direction and force of the wind, magnetism and the tides, of great interest to science, and which will redound perhaps more to the permanent reputation of Dr. Kane, than even his personal narrative.

Prof. Bache has probably written to you on the subject of

the magnetism, the tides and the currents of the north ; and I shall therefore confine my remarks to the meteorology of this region.

At no previous period in the history of meteorology, has there been so much attention given to this science as at present. Systems of contemporaneous observations are now in operation, in almost every quarter of the globe, both on land and sea. You are probably aware of the fact, that the Smithsonian Institution, in connection with the Patent Office and the War Department, and in co-operation with the Board of Education of Canada, and the Hudson's Bay Co., has established a system of meteorological observations, which will soon be extended over the whole of North America. From the facts already collected by this system, it would appear that the great changes of weather, either of heat or of cold, enter our territory from the north, at the eastern base of the Rocky Mountains, and thence extend southward and eastward, over the whole United States ; and that at least there are two systems of storms, one coming from the base of the Rocky Mountains eastward, and the other commencing in the Caribbean Sea, and following the general course of the Gulf Stream, over-laps our coast.

Now, it must be evident to you that it would be highly interesting to trace these changes of the atmosphere as far as possible to the North ; but unfortunately, during the period of the voyages to the Arctic regions, previous to that of Dr. Kane, no contemporaneous series of simultaneous observations was in existence.

Captain McClintock has generously put at our disposal, the original manuscripts of his observations ; and these, in connection with those of Dr. Kane, give us such indications of extended connection of disturbance in the atmosphere, as to render us exceedingly desirous of obtaining more information of the same character.

Not only are observations in reference to the abnormal condition of the atmosphere of great value, but further information is required in regard to the general circulation of the winds. In the latest deductions of the distinguished Director of the National Observatory, from observations at sea, the wind is represented as blowing in the Arctic regions toward the pole, and ascending at that point ; while other investigators, from strictly *à priori* conceptions, have inferred that precisely the reverse direction is the true one. To settle this question, which is connected with the theory of the entire circulation of the atmosphere of the Globe, is a matter of much

scientific interest. Besides the foregoing, a series of observations on the temperature of the different winds, for a single additional winter, at a position near Van Rensselaer Harbor, the seat of Dr. Kane's observations, would tend to prove or disprove the hypothesis as to an open sea.

Although the list of appropriations of the Smithsonian income for the present year has been made out, yet so much interest is felt by the directors of the establishment in the enterprise of Dr. Hayes, that a contribution would be made toward supplying the necessary instruments; and I doubt not, that the Navy Department, the Coast Survey, and the National Observatory, would co-operate in rendering assistance to the same object.

Very respectfully

Your Obedient Servant,

JOSEPH HENRY,

Secretary.

FROM COMMANDER M. F. MAURY, LL.D.

OBSERVATORY, *Washington*, }
21st March, 1860. }

DEAR SIR :

I have received the invitation in behalf of the Geographical Society's Committee on Arctic Exploration, and would be most happy to participate in the proceedings of the proposed meeting; but I am tied down here. I concur most fully and heartily with Dr. Hayes in the position which he takes in his book—which, please say to him, I have read with much interest and at a single sitting—that the cold by its *direct* influence upon the person is not the chief obstacle in the way of Arctic Exploration. The great difficulty has been in the fact that explorers have not heretofore been able to enter fully upon their work with companions in fresh, vigorous, and robust health. And as a proof in favor of this position, we have but to look at the climate of Yakoutsch in Siberia. There, every winter, the thermometer reaches a lower stand than any arctic voyager has ever found it to do (Erman quotes it at 72°), and yet Yakoutsch is in a grazing country.

Independent of De Haven's drift, of the drift of the *Resolute* and the *Fox*, what the whalers call the middle ice of Baffin's Bay proves annually that every winter there is an ice-drift out of the Arctic Ocean. This middle-ice, you are

aware, is the last to yield to the summer-heat, because it is frozen at the North, and is therefore not only more compact, but colder than the littoral ice which is formed on either side, both in Baffin's Bay and Davis' Straits. And the fact that a tongue of ice a thousand miles long comes down every winter from the North into that bay and strait, is proof that this moving mass must be separated from the main mass of ice in the Arctic Ocean, and if separated there must be water between; and that open water—there are many other reasons to believe—is not far from the northern end of those straits through which this drift annually takes place, and which connect Baffin's Bay with the Arctic Ocean. And if Dr. Hayes can get up in time to employ his *first winter* in pushing to the North, I have no doubt whatever but that he will come to open water.

I have just come across a new fact, which favors the idea of open water in the Arctic Ocean, and that fact is in the indications of the barometer as well as in the direction of the wind. I have just risen from the discussion of something like a hundred thousand observations upon the barometer, and of more than a million upon the direction of the wind at sea. These observations show that as you approach the Poles, especially the South Pole, where we have the rule, the mean height of the barometer is less and less and the average direction of the wind more and more towards the Poles. In other words there is a great rarefaction of the air in the Polar regions; and we can only account for it upon the supposition that this rarefaction is due the effect of the latent heat of vapor which is liberated in the processes of condensation there. And the question comes up, since the Arctic Ocean is encompassed almost entirely by land, whence do those vapors come which liberate all this heat in the cloud region, if not from that boiling, bubbling pool of Gulf Stream water, which my observations show goes into that sea as an under current, and which we know comes out as an upper one, and which we therefore infer must at some place cease to go forward, rise up and begin to flow out? However, I will say no more upon this subject at present, except to assure the Society, Dr. Hayes, and the Committee, of my sympathy in the objects which they have in view.

Respectfully, &c.,

M. F. MAURY.

DANIEL W. FISKE, Esq.,
Genl. Sec. Am. Geog'l. and
Stat'l. Society, New York.

N. B.—I write in great haste and without time to elaborate this barometric indication of an open water. I send you a monograph (No. 1) and a diagram (profile of the atmosphere), which will enable you to do it at leisure.

FROM DR. B. A. GOULD.

CAMBRIDGE, 1860, *March* 20.

MY DEAR SIR.

It is with much regret that I find it beyond my power to be present at the meeting of the N. Y. Geographical Society, and to join in the efforts there to be made for the furtherance of Dr. Hayes's proposed expedition. My interest in and sympathy for the movement are so great, and my hopes for its success so earnest, that the opportunity of contributing to its progress, in however small a degree, would be more than welcome.

Happily, those times are with the past when every pecuniary outlay needed, as an incentive, the prospect of some near return in money or in physical power. And it is encouraging to see that the efforts now making by Dr. Hayes and his friends, are urged by arguments of an intellectual, rather than of a material character. Few thinking men are now to be found with us, who do not admit the prosecution of scientific research to be among the duties of our race; and though, in the wondrous system of compensation which prevails throughout the moral, intellectual, and physical creation, mankind has always been rewarded by some material blessing, for the pursuit of knowledge, no matter how unpromising, or of thought, however abstruse, yet our country has at last reached that stage in its development when the investigation of nature's laws is considered as a sufficient end, rather than as a means only for some other result. Astronomy, geography, zoology, philosophy, are now prosecuted and honored for their own sakes, not for mere uses; yet in return, they bring us unsought and unawaited recompense. And if it be among the bounden duties of our race to gauge the abysses of space, and measure the duration of all elapsed time of which the record remains; to explore the unspeakable distances of the material universe; to detect the structures of the polyp, and the lichen; to analyse the unnumbered forms which chemistry reveals, and learn their mutual relations; to investigate by untiring experiment and continual induction the laws of light, heat, electricity, mag-

netism ; to observe the habits of animals and plants, and the track of meteors and comets,—who can doubt that it is also our bounden duty to study the surface of this earth of ours, and to learn at least the configuration of its land and water, its coasts and channels, and the distribution of its mountain ranges. We are yet unaware of all these primary facts, though our feet are chained to an earth so small that our ships sail constantly around its whole circumference within a less time than is embraced by the cycle of the seasons. That its Arctic and Antarctic regions have remained so long unexplored, is to me a more remarkable fact than any other in the history of geography. The practicability of Arctic explorations has been abundantly set forth by Dr. Hayes ; who has also shown that the calamities which have unhappily attended so many Arctic voyages, have been accidental in their character rather than incidental to the nature of the enterprise. And in his anxiety to engage in a new expedition may be found the strongest guaranty of the strength of this conviction, on the part of one than whom few living men are more competent to judge, and who certainly knows all the discouragements most thoroughly.

The question of practicability being thus disposed of, it is clearly a duty to prosecute the geographical investigation. Not only the distribution of land and sea,—of glacier and open water and impenetrable ice,—about the mysterious pole are to be discovered, but important physical facts are to be learned, which may throw ample light upon problems yet unsolved. In those regions, where the needle has lost its power of pointing to the north ; where sun and moon no longer rise and set with the earth's daily rotation ; where the Aurora has its home ; where the properties of matter are so changed from the state in which we know them that iron becomes brittle, quicksilver solid, and snow gritty like the beach sand ; where the centrifugal force of terrestrial rotation is gone, and an untried sea ebbs and flows according to laws yet unknown ; where the almost unbroken darkness of a six months' night, and an atmosphere clarified to a transparency without example here, afford incomparable opportunities for scrutiny of the northern heavens ; where the distribution of temperature is known to follow peculiar and yet undetected laws,—the scientific results which such an expedition, provided with proper apparatus in the hands of competent men, may bring us, are quite beyond enumeration. There is no department of physical science which cannot furnish abundant problems for such an expedition to solve. Besides all this, there is abundant

reason to suppose that a wide expanse of ocean, the waters teeming with animal life and its shores with vegetation, surrounds the terrestrial pole, and contains stores of new revelations for zoology and botany. Whether the water seen in 1854 by Morton, was or was not the open Polar Sea, is a comparatively unimportant question; since the almost universal faith of scientists in the existence of such a sea is founded on other considerations, and is an inference from well-known and undoubted physical facts.

It is the duty of mankind to explore these strange and yet uncomprehended portions of our globe; and, more than this, it is a duty which seems to devolve properly upon our nation. Europe has contributed more than her just proportion of geographical expeditions. What region on earth is not full of her labors? Not only the islands of the sea, and the very heart of Asia have been trodden by the feet of German and English explorers, the sources of the Nile and the Niger, the inland seas of Africa, the steppes of Tartary, the forests of Australia, tracked by European footsteps,—but it was the great German traveler, whose loss has but lately come home to the world like a bereavement of the race, who gave his early manhood to scientific explorations in both portions of our own continent. Even within our own days, the northern shores even of America have been traced and delineated by English geographers, and we Americans left until a late date far in the background as regards the geography of our own hemisphere. The very last expedition which visited Arctic shores, and brought back the solution of the sad problem which the lapse of eight years had but rendered more intricate, sailed from trans-Atlantic shores. It was equipped by trans-Atlantic hands, and through trans-Atlantic contributions. We Americans now owe it to the world and to ourselves to prosecute these researches.

It is easy for any one man to disavow responsibilities which belong to his race, and disclaim any personal liability for the indebtedness of his nation; but the race and the nation are made up of individuals, and chiefly, too, of such as are incapable of contributing to such enterprises. Whoever does contribute, wins a claim upon the gratitude of his fellow-men, and of those who shall live after him; and I rejoice at the cause for pride which all Americans may feel at the prominent relief in which one honored name from your city already stands emblazoned. It is eminently fitting that the enterprise now contemplated should originate in the great commercial center of our land, and appeal to the commercial men

of that city for much aid, since commerce is debtor to geography and to exploration. And among a people which is far from ashamed to avow itself "a nation of tradesmen," it is to those whom commerce has made capable of rendering aid that science must look for support.

The route proposed by Dr. Hayes, through Smith Strait and Kennedy Channel, and the spot selected by him for wintering, seem most judicious; and there appears to be every reason for confidence that the expedition proposed would result in the solution of the problem of the open polar sea, its boundaries, and approaches, as well as in much other service to science.

With cordial wishes for the success of this enterprise, and for the speedy and thorough equipment of Dr. Hayes and his party, and with kindest regards,

I am, my Dear Sir,
Most faithfully yours,
B. A. GOULD.

FROM PROFESSOR A. GUYOT, LL.D.

PRINCETON, N. J., *March 20, 1860.*

TO DANIEL W. FISKE,

Secretary of the American Geographical Society.

DEAR SIR:—I have just received the invitation that you sent to me in behalf of the Committee of the American Geographical Society on Arctic Exploration, to be present at the meeting to be held on Thursday next, 22d, for the purpose of devising means to aid Dr. Hayes in his plans for continuing the researches of Dr. Kane. I much regret that my duties absolutely preclude the possibility of my complying with the wishes of the Committee. At the request of one of their members, I expressed in a letter to him my views on the proposed expedition, and I beg to refer to it for further details. I beg leave only to repeat here, in a few words, what I said there, viz: that, though there may be a difference of opinion as to the best way of obtaining the proposed end, I fully recognize the duty, of our scientific age, of investigating all parts of our globe, with the hope of an immediate practical advantage; and when a man of pure enthusiasm for scientific researches comes to us spontaneously, as Dr. Hayes does, and offers to submit himself to the certain sufferings attending such an

undertaking, and to run the risk of losing his life for advancing our knowledge of these unapproachable polar regions, we are bound to honor him, to aid him, and to give him the hearty God-speed which is due to every noble and disinterested enterprise.

I remain, Dear Sir, very truly yours,
A. GUYOT.

FROM BAYARD TAYLOR.

BATH, N. Y., *March* 19, 1860.

MY DEAR SIR :

I regret exceedingly that I shall be absent from New York during the occurrence of the meetings for the support of your proposed expedition. Knowing your plan of exploration, I have entire faith in its feasibility, and should be glad to contribute my share in recommending it to the public. In a long conversation which I had with Dr. Kane during my last interview with him, he communicated to me his views with regard to an exploration of the open Polar Sea, (the existence of which, to my mind, does not admit of a doubt,) and proposed a plan very similar to that which you have adopted.

While in Lapland in 1857, Mr. Berger, a Hammerfest merchant, assured me that he had penetrated to latitude 84 degrees on his voyage in search of seal and walrus, and found the sea at that point perfectly clear of ice. There are undoubtedly summers when the ice-belt stretching across from Greenland to Spitzbergen is broken up, leaving an open passage to the Pole; but the disadvantage of this route consists in there being no winter quarters from which sledge parties could be pushed forward to any considerable distance. Smith's Sound undoubtedly offers the safest and most practicable route for approaching the central Polar Sea; among which advantages, not the least is the opportunity of a safe return.

From my own slight experience of an arctic winter, I know how readily the rigors of the climate may be endured so long as the mind is kept active and cheerful by the pursuit of an important object. Your own capacity in this respect has been fully tested already; and should you succeed, as I most earnestly hope, in departing this year on your great and heroic errand, I for one will look forward with confidence, both to your success and to your return.

Very truly yours, BAYARD TAYLOR.

The presiding Vice-President, before introducing Dr. HAYES to the audience, remarked that the action of the Geographical Society in aiding the proposed expedition to the Arctic seas, was strictly within the province of its legitimate duties. It was but following the example of the European Societies in similar cases, not to say its own example in regard to the lamented Dr. Kane, whose enterprise was commenced under the auspices of this Society. That gallant and accomplished navigator has conferred luster on the American name, and as his countrymen we may be proud of his well-merited fame. But Dr. Kane was unable, in consequence of unexpected obstacles, to accomplish fully the objects of his last expedition; and his companion, Dr. Hayes, not less intrepid and energetic than his lamented commander, now proposes to complete what he had begun, by penetrating beyond Kennedy's Sound into the Polar Sea, and thus reaching the North Pole itself.

It is well known that these arctic voyages are attended with much less risk and danger than formerly. Within the short space of twelve years, an immense improvement has been made in various respects, both in regard to protection against disease by proper food, and the knowledge of traversing those inhospitable regions. Every summer some of our whalers go within one hundred miles of Smith's Strait, where Dr. Kane was so long imprisoned by the ice. Had he taken the route by the west instead of the east side of that Strait, he would have found open water, and would have, no doubt, accomplished what Dr. Hayes now proposes to attempt. A few days since, at a meeting of this Society at its rooms, one of these whaling captains favored us with an account of his labors in that quarter of the arctic regions, and was accompanied by an Esquimaux, perhaps the only one who has been seen in this city for many years. Capt. Buddington informed us that he had spent a year among the Esquimaux, without any great privation or hardship.

But it is not my intention to enter into the discussion of the points, which will be fully examined and clearly treated

by others this evening—the learned and scientific persons who are to address you, and especially by Dr. Hayes himself, the undaunted and intelligent navigator, whom I now have the pleasure of introducing to you.

ADDRESS OF DR. HAYES.

MR. PRESIDENT, LADIES AND GENTLEMEN :

It is now a little more than four years since Dr. Kane returned from the North, reporting the discovery of an open Polar Sea. Physicists had long before been generally agreed that such a sea probably existed; and the northern coasts of Europe, Asia and America having been determined with considerable accuracy, it was assumed that the great body of water which they invested was mainly free from land, and hence, being free from all centers of ice accumulation, must be mainly open, at least during the summer. The first substantial confirmation of this theory was obtained by the Russians, who, under Hedenström, in 1810–11, and again under Anjou and Wrangell, in 1820–24, discovered an extensive open area, or polynia, to the northward of the New Siberian Islands. It was left to our countryman, Dr. Kane, to bring from an opposite meridian more conclusive proof, and his researches assume the dignity of a great discovery.

I have, on a previous occasion, dwelt minutely upon the results of the second Grinnell expedition, and I will not now detain you with a discussion of their importance.

My design is to bring more prominently to your notice than I have done hitherto, the plans and purposes of the expedition which I propose to conduct to the field of exploration which Dr. Kane was the first to enter, with the view of continuing the researches which he so admirably began: to add to his observations upon the Polar Sea; to complete the survey of the northern coasts of Greenland and Grinnell Land; and, over the iceless waters which lie beyond them, to reach the north pole of the earth. In order that you may clearly comprehend the nature of the proposed attempt, and the grounds upon which are based my expectations of success, I will ask your attention to the rude diagram upon the wall, exhibiting the Arctic regions in circumpolar projection.

By an examination of the latitudes you will perceive that the Arctic Ocean has a mean diameter of about 2,500 English

miles; and, rudely estimated, an area of 5,000,000 of square miles. The lands investing this extensive basin form the southern margin of a great ice-belt, which is continuous across the various channels connecting the Arctic with the Atlantic and Pacific oceans; thus surrounding the region adjacent to the pole with a frozen annulus.

Dr. Kane, whose first voyage as surgeon of the expedition under Lieut. De Haven, in 1850, had given to him some important information upon the currents and ice-movements of Baffin Bay, carefully collated such accounts as had been published respecting the various efforts to penetrate the ice barrier; and he thus arrived at the conclusion that the true route lay up the theretofore unexplored Smith Strait, which opens at the head of the Bay.

To America is due the credit of having reduced the evidence to practical results. The second Grinnell expedition, begun in 1853, added new proofs to those previously known, in favor of the route by Smith Strait; and at the present time there is sufficient warrant for asserting that it is by this channel that the pole is to be reached. It is true that, in this direction, the ice-belt is broader than at any other point; but this fact gives to the route peculiar advantages, since the polar current, setting rapidly to the south through Baffin Bay, loosens the ice, and opens passages through it, such as are not found to the same extent in other quarters where the direction of the current is northerly.

Although ice is often met in the line of Baffin Bay as low as the Banks of Newfoundland, yet no serious obstruction to navigation is presented until we have reached the latitude of Upernavik, $72^{\circ} 40'$; and, beyond this, whaleships penetrate annually, and with little risk, as far as latitude 76° , in order to get to their fishing-grounds about the mouth of Lancaster Sound. Between the highest latitude attained by the whalers and Smith Strait, the water is mainly free during the summer, and the distance, not exceeding 150 miles, is readily traversed.

Dr. Kane's efforts in this direction were experimental, and his winter harbor was selected on the eastern side of the channel, in latitude $78^{\circ} 37'.$ "

His subsequent explorations proved his position to have been an unfavorable one; for he was exposed to the full force of the polar current, which comes down from the north through the newly-discovered Channel of Kennedy. The ice carried down by this current not only prevented his release, but, in consequence of the obstruction presented by the land, it was broken into hummocks to the northward, which rendered

traveling in that direction excessively laborious. The same cause which operates to force the ice upon the Greenland coast will free the coast of Grinnell Land. Upon visiting this shore in the spring of 1854, I found a smooth sheet of ice extending along the land as far up as latitude 80° . This ice was of but one winter's freezing, and hence, upon the closing in of the winter of 1853-54 there was open water as far as that parallel. It is the knowledge of this fact which leads me to believe that a much higher latitude can be attained on the western side of the strait than on the eastern. Beyond Cape Frazer, lat. $79^{\circ} 42'$, the coast trends almost due north, and the current, flowing through the channel without obstruction, will, no doubt, leave the ice smooth and favorable for sledge operations. It is upon the coast of Grinnell Land that I will secure a harbor; and, as already observed, I have every confidence that a vessel can be taken along this shore with ease and safety, nearly to the 80th parallel.

The first summer will be exhausted in reaching this locality, and the winter will close around us early in September. From this time until the first of the following March we will remain inactive. Upon the earliest return of sunlight the advance parties will be sent forward, and, by means of dog sledges, provision depôts will be established at available points along the land. These parties will be followed by the main expedition for the exploration of the Polar Sea. A boat, mounted on runners, will be transported over the ice until we have reached the object of our search, when, if such fortune awaits us, we will launch our little vessel upon the unknown waters, and, bidding God-speed, will push off directly for the Pole.

It is unnecessary for me to enter into the details of such a general plan of operations, in order to demonstrate its feasibility. The experience of Dr. Kane's parties, and the extensive journeys of the English explorers, are fresh in your recollection. A team of seven dogs will readily drag from 500 to 800 pounds weight upon a sledge, and they will average in speed from thirty to forty miles per day, upon a ration of thirteen ounces of pemican. That a boat may be transported over the ice is shown by the experience of Parry, Kane, and others. The success and safety of the journey across the polar waters depends upon the skill with which the vessel is managed. An ordinary whale-boat, well manned, is as secure as any ship that rides the sea.

I have no doubt that we shall meet the open water. If the season is backward, its southern margin may not extend as far south as the point at which it was discovered by Dr. Kane;

but I do not anticipate that, in any case, our sledge travel will be extended further north than lat. 82°. Beyond this latitude there are, as already observed, conclusive reasons for believing that an open sea exists. The land does not, in all probability, extend far beyond the parallel mentioned; and all experience shows that it is only near the land that we find the arctic waters completely closed.

It is, indeed, not too much to say that so large a surface of water as the Arctic ocean can not be frozen over, even during the winter; and with the advance of summer the ice rapidly dissolves. The great body of the waters of the Arctic ocean have a temperature considerably above freezing; and as soon as the frigorific effect of the atmosphere is removed, the warm influences from beneath operate upon the ice and soon waste it away. Besides, during the summer the ice is discharged by the great polar currents of the Greenland sea, and this must alone operate to free a large area about the pole.

The difficulties presented by this line of exploration seem to me to have been much over-estimated by persons who, not familiar with the region, have written and spoken upon the subject. Indeed, by the experience of three centuries, the obstacles presented by the ice, the cold, and the scurvy, are readily overcome. Whale-ships visit those seas annually, and, as before stated, pass within a short distance of the seat of proposed operations. During the past twelve years the search ships have penetrated the Baffin-Bay ice, and wrecks are of very rare occurrence. The cold has been abundantly proved to be no obstacle to successful travel.

The scurvy is more readily resisted in the arctic climate than in any other, provided the recent discoveries in the art of preserving food are fully availed of. From all causes combined, the mortality on board of vessels visiting the Arctic seas during the past twelve years, has been less than three per cent. of the whole number of persons engaged. Several ships have wintered in the ice without the occurrence of a single case of scurvy.

I come now to speak of the utility of the proposed effort. Happily, on this head I am spared any reflections of my own. The subject has been maturely considered by the leading scientific societies of the United States—by your own body, by the American Association for the Advancement of Science, by the American Philosophical Society, by the American Academy of Arts and Sciences, by the Philadelphia Academy of Natural Sciences, by the Boston Society of Natural History, and by the New York Lyceum of Natural History; and

their conclusions, expressed by a large number of our most eminent citizens, are to the effect, that the objects contemplated are not only important to mankind, but are such as to warrant a full sanction and hearty encouragement of the project. I will merely state that, besides the survey and exploration of the Polar Sea and its adjacent lands, the proposed line of exploration covers a field in which the solution of important questions of magnetism, and meteorology, and of natural history can certainly be effected. Indeed, there is no department of physical science to which valuable results may not be contributed.

I am fully aware of the peculiar causes which have tended to mislead the public mind in relation to the dangers of arctic exploration. These causes justify the hesitation which was felt in former years; but now that the truth has been made known by so many reliable observers; now that the means of travel have been so fully perfected, and the facilities for promoting health and comfort have become so well determined,—is it too sanguine a disposition which leads me to believe that I shall see again the little flag which, in 1854, I planted upon the coast of Grinnell Land? or to hope that it may even be my fortune to carry it thence to the point of extreme northness?

The Chair then presented Mr. EGBERT L. VIELE, Chairman of the Special Committee of the Society on Arctic Exploration, who read the following—

REPORT OF THE COMMITTEE.

The Special Committee appointed to co-operate with Dr. Hayes in his plan for an expedition to the Polar Sea, respectfully report that they have given to the subject that attention which its importance demands; and, without recapitulating the arguments in its favor, which have been already fully set forth in previous reports submitted to the Society, they unanimously recommend that active exertions be made at once to enable the expedition to sail this spring. The great interest which has been manifested by men of science, and by a large number of American citizens, in the success of the expedition, leads to the hope that the necessary funds will be con-

tributed in time for the organization of the small party which will be sufficient to solve the problem which has for so long a time occupied the attention of geographers throughout the civilized world. There can be no question that its solution, by an American expedition, will add to our national reputation. The means for accomplishing success are so simple, and the end to be attained so full of valuable results, that we feel assured that an appeal to the love of science, and the patriotism of our citizens, cannot be disregarded. The Committee have, therefore, prepared a paper to be signed by those who may be disposed to become the patrons of the expedition, which will be circulated at once, and to which the Committee would ask the earnest attention of all who feel a just pride in the advancement of our national character.

EGBERT L. VIELE,
AUGUST BELMONT,
FRANCIS LIEBER,
GEORGE FOLSOM,
BENJAMIN H. FIELD,
HENRY E. PIERREPONT,
CHARLES P. DALY,
LUTHER BRADISH,
JAMES L. GRAHAM, JR.,
MATTHEW MORGAN,

HENRY GRINNELL,
CYRUS W. FIELD,
PETER COOPER,
MARSHALL LEFFERTS,
HAMILTON FISH,
CHARLES KING,
JOHN D. JONES,
GEORGE F. WOODWARD,
JOHN D. CLUTE,
GEORGE OPDYKE.

Mr. VIELE, after reading the Report, made a few remarks. He said :—

Permit me, Sir, to add, on behalf of the Committee, that the presence here this evening of so large a number of our fellow-citizens evinces the public interest which this subject has excited, and encourages the belief that our most sanguine hopes of the early organization of this expedition will be fully realized. If, Sir, there are those who, exaggerating in their minds the dangers and privations of former expeditions, refuse their countenance to this one on the score of humanity, I beg them to remember that this expedition in its going and its coming, will be guided by the light of experience. Nor should they forget that Arctic pioneers have suffered no more than those who first mapped out our Western wilds, where now resounds the hum of busy industry. Why, Sir, the adventures of Pike, and Long, and of Bonneville, whose steps have been illustrated by the pen of an Irving, of Lewis, and Clarke, appear now to be the height of fiction; that rocky alpine ridge, seeming to sever a continent, which until a few

short years ago cast back defiant shadows on the footsteps of civilization, has been subdued by the hardy hunter and adventurous pioneer, amid more than arctic perils. Through its defiles and its gorges our little army has borne the Eagle and the Stars; and the emigrant follows their trail, and even the mother with her babe in arms, journeys along the road so full of perils to the first explorers, the history of whose sufferings fades into dim romance. If, Sir, it shall be asked what is to be the practical result of the expedition, I would answer, the same result that England expected when she equipped the splendid expedition under Sir John Franklin, to solve the problem of the North-west Passage. The question had long become a purely geographical one, and that expedition was the tribute of a generous and enlightened government to science and to a just national pride; and I may add that, of all her heroes by sea or by land, England has no prouder names than those who won their laurel wreaths among the floes and icebergs of the Arctic Sea. No wonder if there should be a little jealousy there of the American flag. If the American Geographical Society hesitate to send out this expedition, we shall deprive our country and our countrymen of its and their share in a glorious field of science and honor.

The fund for the expedition has now reached the sum of \$10,000, and as evidence of the deep interest that men of science take in the subject, I may announce that Professor Bache and Professor Henry have contributed the sum of \$1,000 each; and I may also mention among the liberal contributors, Mr. Henry Grinnell, Mr. Cyrus W. Field, Mr. George Folsom, Mr. Benjamin H. Field. Mr. Grinnell has kindly consented to act as Treasurer of the fund.

At the close of Mr. Viele's remarks, the presiding Vice-President introduced to the audience Professor BENJAMIN SILIMAN, Jr., of Yale College, who said that this scientific undertaking had all the elements of success. A definite plan had been laid down, and successful explorers were ready to pursue that plan. All that was wanting was the means, which he hoped would not be withheld. The dangers of an arctic voyage were not near as great as they were supposed to be. With improved instruments and valuable experience, the project, with the help of Providence, would succeed.

Professor O. M. MITCHEL next stated to the Society his views in connection with the important subject under consideration. He dwelt upon the scientific utility of such an expedition as was proposed, and upon the great necessity of immediately furnishing the amount needed by Dr. Hayes. He said that we, who stayed at home, should be willing to furnish aid to men of bold hearts and scientific enthusiasm who were willing to undergo the fatigue and perils incident to so distant a voyage.

The Chair then introduced to the Society FRANCIS LIEBER, LL. D., of Columbia College.

ADDRESS OF DR. LIEBER.

We are all familiar with Kane's account of his Arctic exploration, which reads like an epic whose theme is the Fortitude and Perseverance of Man, wrestling with Nature herself in her own fortified home, where she has ruled with undisputed power in proud disdain of our restless race. The Smithsonian Institution is in the very act of publishing the magnetic and meteorologic results of that enterprise; and while many of us are engaged in collecting means to erect in our city a monument in honor of Kane, a companion of his in suffering and struggle—one of those vikings of science—presents himself and asks us to assist him. What does he desire of us? What does he offer? What is his object?

Dr. Hayes simply offers *himself*—his energies, his life; he simply asks of us a craft to sail in, and food and fur for his companions, and he does this in order to enlarge the sphere of science, to add one more discovery to the history of our advancement, one more victory to the annals of human progress, or, if Providence has so decreed it, one more name to the list of the martyrs of knowledge and civilization. He is a soldier who asks for arms that he may fight for us; the rest he gives himself.

What shall we say? What answer shall we make? He stands at our door, we must either bid him go his way, or else tell him to enter that we may devise, with him, the means for his Arctic pilgrimage. What say you? Shall we side with Plato, who grandly speaks of man's divine curiosity, that attribute of humanity which makes us yearn for knowledge, and fills the noblest souls with a burning zeal to know, and to

know more and more, and to press on farther and farther, that divine curiosity which inflamed all Europe at that wonderful period of maritime discoveries to which we now owe our very existence as Americans? Obliterate this divine curiosity from our souls and there is an end to advancement, to culture, to nobleness of purpose, yes, even to a common life of ease or comfort for the many. Strike out this divine curiosity in the history of our race, and we would know of no Henry the Navigator planning and directing from his retired palace at Sagres the successive discoveries of headland after headland along the coast of Africa until the Cape of Good Hope at length was doubled, and the European mind gathered strength to dare a greater discovery; we would have no Nineteenth Century graced alike by tracing laws in the material world, and by working the mines of the past, proving consecutiveness and cohesion in the advancement of our race. Shall we forget that

“The sovereigns of this earth, for good, for ill,
The strong triumvirate, are Thought, Love, Will?”

Shall we side with Plato, or shall we take for our spokesman that Oriental who wrote the memorable and typical letter to Layard, when the Englishman, urged by divine curiosity, asked his assistance in disemboweling Babylonian grandeur from the dark and deeply sunken past? Shall we answer our petitioner as Christians that prize, besides holy affections, above all things intellectuality and spirituality; or shall we say to Hayes as the Mussulman wrote to Layard:—

“The thing thou askest of me is both difficult and useless.
* * * Seek not after the things which concern thee not.
Go in peace. Of a truth thou hast spoken many words, and there is no harm done, for the speaker is one and the listener is another. * * * Shall one say this star spinneth around that star, and this other star with a tail goeth and cometh in so many years? Let it go! Thou art learned in many things I care not for; and, as to that which thou hast seen, I defile it. Will much knowledge create thee a double belly; or wilt thou seek paradise with thine eyes?”

You have to decide—Plato and a very small portion of our opulence, or the Oriental and his Asiatic apathy.

The entire sum we stand in need of in addition to what has already been secured, amounts to about \$25,000. Dr. Hayes says that \$45,000 would be the very highest sum required for the completest outfit, but that he will set out if he can get only \$20,000. To this we demur. A good and

sound outfit is half the success of an undertaking. All captains have known this well. The Cæsars, the Napoleons, the Wellingtons, occupy themselves with the ounces of bread and meat, and the shirts and flannels of the soldier, quite as much as with the arms, the powder, the moral condition and the strategic calculations, before they launch into a war; and each experienced soldier, as every wayfarer, looks well to his shoes.

This is emphatically true of expeditions to regions where men find nothing and have nothing with which to battle against the angry elements, and dreary darkness, and icy monotony, and distant loneliness—nothing but what they carry along with them. Arctic research has its history in more than one respect; and no portion of it is more instructive than the improvement made in the skill of sending food along with the warrior sailors, from Baffin's scurvy-hunted crew to the well provided and health-enjoying men of McClintock, who relished, on their festive days, the good plum-pudding which Lady Franklin had put up with matronly forethought. Let us not allow Dr. Hayes to go forth to battle without having his cannisters of fresh vegetables and meat as well provided as gallant McClintock had. It is a vital question, not only vital as to physical life, but also as to the whole success of the expedition. How sad would be for us the reflection that he did not succeed, and was obliged to return for the want of a few bushels of coals, or of a few boxes with beans or peas, or some pounds of coffee or cocoa!

Can then, this city, and Boston and Philadelphia, not contribute so small a sum—a sum far smaller than that which is frequently wasted on objects which vanish, without a trace, on the day which produces them? It may be that our National Government will not feel authorized to contribute to this expedition. We must raise the means wholly or chiefly among ourselves; and we candidly acknowledge that it would be much easier for us to obtain the required sum were there not serious doubts concerning the expediency of this great undertaking floating about in the community, and were there not positive objections to it made by some, we believe in perfect good faith. Let us, then, consider these objections somewhat in detail.

Persons, among whom we have respected friends, have been asking, What can you gain by it? What is the utility of the Whole? What is this waste of life and energy and treasure good for? Does it not, some have said, almost

amount to suicide, thus to repeat these terrible expeditions to regions where we know nothing can be found but silent ice?

What can we gain by it? If this question is meant in a scientific sense, I, being no professed naturalist, do not venture to answer it in this place by direct judgment. I must reply to the question by that intermediate judgment by which a Washington or a Frederic is obliged to appoint a chief justice, or by which we who know little about the mechanism of our watches are nevertheless fully able to select a fair watchmaker, and to make him decide what is to be done to our time-pieces. Each single man can decide by direct judgment on a very few interests only. We are social beings, depending upon one another in every respect, physically no more so than intellectually. I have asked, therefore, the counsel of a man whom every one of you, and of this whole land, and of Europe, will readily acknowledge as a judge, more competent than whom no one can be found. I have asked A. Dallas Bache, of Washington, to give me his opinion—to give it so that I might use it publicly, and to write his letter conscious of all the responsibility which would naturally attach itself to so serious a warrant. He sent me in reply the following letter:

COAST SURVEY OFFICE, *March 14, 1860.*

DEAR DOCTOR:

I can but think your estimate of the importance to science of the proposed Arctic Expedition is not beyond the mark, and trust that you will express it publicly with all the force which you put into problems which interest you. The question of the open Polar Sea is the great geographical question of the day, and it should be solved thoroughly, as to place and circumstance, by an expedition from the Continent of America. The unanimity with which men of science have spoken on this subject authorizes the strongest appeal in behalf of Dr. Hayes and his plans. We must know whether the Gulf Stream, which is emphatically the great hydrographic feature of our coast, returns to us again after having given their climates to the countries of Northwestern Europe, and how, and why, and where; we must have all uncertainty in regard to the progress of the tide wave in these inland icy seas removed; we must have the magnetism of these trans-magnetic polar regions settled; our knowledge of the isothermal lines beyond the pole of cold should be made complete; materials for studying the flora and fauna of that region collected. But above all is the geographical problem, and that is of itself enough to excite to enthusiasm in behalf of the expedition. I have proved my sincere interest in the undertaking, my dear Doctor, by offering a part of the slender means gathered from the pursuit of science to this object—a small sum in the abstract, but not a small one when the sum total of my savings is reckoned.

Yours, very respectfully and truly, A. D. BACHE.
To Dr. Francis Lieber.

So far the letter of my friend. Does he think the undertaking useless? By no means.

Does he speak, not only for himself, but of "the unani-

mity of the men of science," in favor of Dr. Hayes's plans? He does.

Does he point out the great problems that must be solved, and that it is of the highest importance to solve? He does: he does not occupy himself with the romantic heroism of the expedition.

Does he ardently wish that Dr. Hayes may find the necessary means? He does.

Does he willingly share in the responsibility of aiding the bold adventurer? Yes; he offers his tribute, and gives us an example.

Does he vaguely wish success to Dr. Hayes; or does he speak with that clearness which indicates thorough reflection on the subject? His letter is characterized by what I would ask to call scientific manliness.

Let us add to the letter of Mr. Bache, that geography, after Humboldt and Ritter have worked so successfully for its elevation and for a comprehensive knowledge of our planet, may be said to be one of the sciences characterizing our age; and that, with all acknowledgement of the catholicity of knowledge and with all our distaste of scientific or any other provincialism, the very opposite to patriotic devotion, this question—Is there or is there not a polar sea—is in some respects an American problem, the solution of which Providence seems to have appointed more especially to us, Americans of Norse origin, that we may offer it as a sacred contribution on the common altar of knowledge at which our whole race worships and sacrifices. It almost appears to me, as if to us Americans, in this century, the command had been issued to scale the home of those dread Northern gods of our ancient forefathers, to conquer them with the lance of knowledge, and to bring that domain back to whom it belongs, to the God of truth and to the God of knowledge.

Were he whose death we lately commemorated in this Society, the Nestor and venerable master of physical science, while yet among us—were he living, I believe, indeed I know, that he would subscribe to every word of Mr. Bache, that he would urge us on, and would say, God speed you, to Dr. Hayes.

Here we leave what we must dispose of by intermediate judgment, and return to that of which we may form our opinion by direct judgment. Enterprises such as the projected one are useful in the highest degree. It is useful, indeed, for a people to see men voluntarily leaving the common pursuit of wealth and comfort, or of ordinary honor, and pursue the

path of profitless self-devotion. Each addition of such a name to the records of a nation, is a substantial gain and national profit. What, indeed, were this world of ours had it not been for those who follow ideas and inquiries, because they feel an irresistible and divine impulse to do so, not because they have a definite and immediate use in view? In science as in architecture. But are there really no distinct objects in view? Tellurian magnetism has become one of the main questions of this age; and when its knowledge shall be established as a full science it will effect the solution of a thousand questions of nature, of life, and will, doubtless, largely influence all the affairs of our kind. And the promotion of this knowledge is one of the main objects of this expedition. Dr. Hayes goes in search of living knowledge, not in search of the dead.

When we are asked what can be the use of this expedition, even if it be crowned with the fullest success, it will be well to bring clearer before our minds certain laws of progress, and certain facts connected with the advancement of knowledge. Those that I desire to mention here in connection with our great argument, are four in number. There is such a concatenation, or, we should rather say, a network of all knowledge, no matter to what branch or sphere it belongs, that each mesh is connected with the other, however remote. All knowledge is inter-efficacious. All knowledge, so that it be truth, acts like the breeze on our atmosphere. However slight, it affects successively the whole body of air, and gives freshness to our breathing.

The second law may be stated thus, that all knowledge in order to be useful must be far in advance of its application. It requires the comprehensive science of astronomy to produce those few formulas which are used by the navigator, and to teach him how they can be applied with confiding reliance. A teacher who knows no more of his branch than that which he is expected to teach in a given class, will teach that little most poorly. Knowledge in this respect resembles the sun. He, indeed, is the great cause of growth; but plants grow mainly at night when the luminary has already gone in advance to evoke vegetation and life in fresh regions. Once more, all knowledge must be far in advance of its own application; and this leads us to the third fact, that in no case whatever can man say, This discovery, this portion of knowledge, this fact, or law, is of no use. We must go farther and say, that a very few truths indeed, of all those that now most intensely influence our existence and promote our well-being, have appeared

important at the time of their discovery or introduction. I speak of moral and physical truths.

This law is exemplified in the discovery of America. When the first news arrived in Europe that a Spanish mariner, called Christopher Colon, had discovered "certain distant isles," the interest was indeed great; but who could then have foretold that with the discovery of America, and with her colonization, and the change of commerce, and the extension of knowledge, and the widening of interests, an entire new book in history would begin? Or may I not say that the law is typified in our religion. Who in the proud palace of the Augustus and of the mundanely most high, thought, or could have thought, that the teaching of a new truth, by a single teacher in that despised province, was nevertheless the sowing of that knowledge which was destined to conquer the empire and to refashion the things on this orb,—Man's political state; man's commerce; man's cities and houses and hearths? When Adam Smith first stated the truth that one nation does not gain by the poverty of another, but that all are gainers by the prosperity of all, no one suspected that a sagacious despot of great power would, in the present year, pronounce the great truth on his imperial throne to the assembled deputies of his nation. We rarely know what our knowledge may lead to, and we do not attain to the highest knowledge if, in setting out, we restrict its pursuit by a distinct limit of utility.

No Franklin knows that his discovery will one day wing the human word that it may outspeed the sun himself. The votaries of all sciences must press on boldly and steadily, neither calculating at the time to what uses the results may be turned, nor looking behind at their own footprints.

As the last of these truths, I would mention that the history of our progressive race turns far more around questions, ideas, principles, and institutions unperceived in the glare of day than around palpable and resplendent facts. Aristotle has influenced all posterity, and is influencing us to this day, incomparably more than Alexander, although the Macedonian is called the Great, and his teacher is not. Interesting, nay, important as it may be at this moment, whether France take Savoy or leave it to Sardinia, the ultimate settling of the question whether there be an open sea or not connected with those two great bodies, the Atlantic and the Pacific, in all its many scientific connections, will surely be in the end of much greater importance to mankind, not because it has reference to the material world, but because it is connected with expanding knowledge and essential progress, just as the foun-

dation of an institution with its own vital and self-ruling power, however humble it may be, is of far greater importance to our race than a brilliant battle or the name of a dynasty.

But there remains the objection to the enterprise so dear to our hearts, that it may lead to a great waste of life. If the enterprise be useful and ennobling, and undertaken in the service of science, we cannot well speak of a waste of life; we could only speak of a sacrifice, or, to be more correct, of an exposure of human life. In replying to this objection, let us renounce the advantage we would derive from showing the essential improvements which have been made in the fitting out of Arctic explorations. I am willing to argue on the supposition that human life is greatly endangered. Be it so. Is there any arduous pursuit that does not endanger life? Does your commerce not endanger life? Do you send for your sugar to the Havana without exposing your mariners to yellow fever? Do you go to Europe on a single trip of pleasure and culture without endangering your lives? Does the whaling in those very seas to which Hayes now desires to go—that branch of our industry which Burke mentioned in Parliament, and of which Webster eloquently spoke in the Senate—endanger no lives? And is whale-oil more precious than the increase of knowledge? Socrates used to say, Arduous are all noble things. We may add, And life-endangering are most high pursuits.

Knowledge requires its martyrs, and glories in them as much as religion does. Let us always be grateful when we find men ready to wager their lives in a worthy cause, not drafted by conscription, but self-impelled and self-devoting.

The speaker, here turned toward Dr. Hayes, and continued:

If, Dr. Hayes, your and our highest expectations should be fulfilled—if you should find a water communication from Smith's Sound into a polar basin, and plow that sea with man-made keel for the first time since the day of creation, and you should ascertain the trending of its shore, and you should sail on and on to Behring's Strait, or be able to steer to Spitzbergen, and come down upon Northern Europe in your little craft, heavily freighted with the glorious news, a shout of victory will meet you, in which we shall join our Triumph! Triumph!

If you cannot penetrate by water, or if you return and can tell us there is no polar sea, we shall be equally thankful, and science will have gained thus much.

If you should be debarred by barriers which no resolution and no heroism can scale, we shall receive you no less with our hearty Well done, companion in the pursuit of knowledge; all enterprises are undertaken with the reservation,—God permitting.

And if that Providence, whose care descends in each flake of polar snow, as it floats down in each sunbeam on the tree-producing zones, has decreed that you shall sleep as soldiers sleep on their own battle-fields, wrapped in the white Arctic sheet, all those of us still remaining for a brief time behind you can do, in our humble way, we shall do, that your name be worthily remembered as one who gallantly fell in a noble contest, truly on the field of honor.

But, Sir, I hope not only that we shall find the means to send you, but also that you will return to tell your noble story here, on this very spot, say two and a half years hence. Keep this appointment. You know that you have the sincerest, the warmest, the enthusiastic sympathy of all those in whose behalf I have had the honor of addressing you and this distinguished assembly. God speed you, and protect you, and all your little band of daring men!

Enthusiastic applause followed the close of Dr. Lieber's address.

Mr. ALEXANDER H. STEVENS, M. D., then spoke of the interest which the matter excited among the medical profession, and said that he believed that the scurvy, one of the greatest enemies of the Arctic navigator, was now disarmed.

Mr. FRANK MOORE then offered the following resolution, which was unanimously adopted:

Resolved, That the special committee on Arctic Exploration have power to add to their number, and that they be authorized to collect subscriptions.

The Society then adjourned.

APPENDIX.

Proceedings of Various Scientific Societies

RELATIVE TO

DR. HAYES' PROPOSED ARCTIC EXPEDITION.

THE AMERICAN GEOGRAPHICAL AND STATISTICAL SOCIETY.

[From the "Journal" of the Society for January, 1858.]

DEC. 16, 1858.—I. I. Hayes, M. D., of Philadelphia, (late Surgeon to the Second Grinnell Arctic Expedition,) read a paper on the "Polar Discoveries of Dr. Kane, and a Plan for Further Research." On motion of Mr. Vielé, seconded by Mr. Henry Grinnell, it was unanimously

Resolved, That the American Geographical Society cordially approve and indorse the plan of Dr. Hayes for a continuation of the exploration and surveys of the Polar Seas, deeming it due alike to the cause of science and our national character that the discoveries of the Grinnell Expedition, reported by Dr. Kane, should not be disputed or ignored, without an effort being made to confirm the results achieved by our gallant countrymen.

Resolved, That a Committee of five members of this Society be appointed to coöperate with Dr. Hayes in the organization of the Expedition proposed by him; which Committee shall report, from time to time, the progress of the organization, and shall give due notice of the time fixed for the departure of the Expedition.

A vote of thanks was tendered to Dr. Hayes, and a copy of his paper requested for the archives of the Society.

THIRD MEETING, JANUARY 6, 1859.—In accordance with the resolution adopted at the last meeting of the Society, the President appointed Egbert L. Vielé, Esq., Henry Grinnell, Esq., Hon. August Belmont, Marshall Lefferts, Esq., Henry E. Pierrepont, Esq., a special committee "to coöperate with Dr. Hayes in his plan for further research into the arctic regions."

THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

[From the "Proceedings" of the Society for 1858.]

BALTIMORE, MAY 3, 1858.—At half-past one o'clock, P. M., Dr. I. I. Hayes delivered in general session a paper on the practicability of reaching the North Pole. A vote of thanks having been passed upon motion of Prof. Wm. B. Rogers, seconded by Prof. A. Dallas Bache, Prof. Hitchcock moved the following resolution :—

Resolved, That a special Committee of seven be appointed by the Chair to inquire and report at this session upon the expediency of having a Committee of the Association to coöperate with Dr. Hayes in reference to an Expedition to the North Polar Sea.

The resolution having been adopted, the Chair appointed the following gentlemen as members of the Committee :—

Prof. Edward Hitchcock, Prof. Joseph Henry, Prof. A. Dallas Bache, Hon. Thomas Ewing, Prof. James D. Dana, and Hon Thomas Swann.

BALTIMORE, MAY 4, 1858.—The Committee to whom was referred the subject of Dr. I. I. Hayes' proposed Expedition to the Arctic Seas report, that,—

1. The question of the open Polar Sea, its limits and character, is the most interesting of those remaining to be completely solved in arctic geography.

2. The statements of Dr. Hayes, surgeon to Dr. Kane's Second Grinnell Expedition, make it probable that, with moderate means and appliances, this problem may be completely solved.

3. The indirect results readily obtained by such an expedition in regard to the magnetism, tides, currents, meteorology, geology and natural history of the arctic regions, and the peculiar phenomena of glaciers and icebergs, and the ethnology, are of themselves of such importance as to demand further research.

4. Dr. Hayes is desirous of devoting himself to this line of exploration, in the difficulties, hardships, and dangers of which he has, when serving with the lamented Kane, had full experience.

5. Therefore, this special committee recommends to the Association the passage of the following resolution :—

Resolved, That a committee of fifteen members of the American Association be appointed to coöperate with Dr. Hayes in his efforts to organize another expedition for arctic research.

EDWARD HITCHCOCK, *Chairman*."

The report having been unanimously adopted, the following committee was appointed by the Chair in accordance with its recommendation :—

Prof. A. D. BACHE, Prof. JOSEPH HENRY, Prof. W. B. ROGERS, Prof. EDWARD HITCHCOCK, Prof. BENJAMIN PEIRCE, Prof. J. D. DANA, Prof. JOSEPH WINLOCK, Hon. THOMAS EWING, Hon. D. M. BARRINGER, Dr. J. L. LE CONTE, Prof. J. E. HILGARD, PETER FORCE, Esq., Prof. JOSEPH LEIDY, Dr. JOHN TORREY, Prof. S. S. HALDEMAN.

On motion of Prof. BACHE, Prof. CASWELL, the President of the Association, was added to the committee on arctic exploration.

THE AMERICAN PHILOSOPHICAL SOCIETY.

[From the "Proceedings" of the Society for 1858.]

STATED MEETING, MAY 7, 1858.—Dr. Le Conte offered the following resolutions which were read, considered, and adopted:—

Resolved, That the Society receives with much gratification the announcement made by Dr. I. I. Hayes, of his purpose to attempt a further exploration of the arctic regions, and, if practicable, to reach the north pole of the earth.

Resolved, That in the opinion of this Society, such an exploration merits the zealous coöperation of the scientific men of the United States, and that, at a convenient time, the Society will communicate to Dr. Hayes such suggestions respecting the promotion of its objects as may be considered useful.

Resolved, That a committee of five be appointed, to coöperate with the committee recently appointed with reference to this subject by the American Association for the Advancement of Science, and to take such measures from time to time, in behalf of this Society as shall be deemed expedient.

STATED MEETING, OCTOBER 1, 1858.—The committee appointed on the 7th of May last, on the subject of further arctic explorations, by Dr. I. I. Hayes, made the following Report:—

The committee to whom was referred the subject of the arctic exploration proposed by Dr. I. I. Hayes, respectfully report,—

That, beside any reflections of their own upon that subject, they find in previous proceedings of the Society ample warrant for the opinion, that the verification of the alleged open sea about the North Pole, and the probable contributions to be made from that region of the earth to the collections of science, constitute sufficient reasons for an earnest interest on the part of the Society, in any reasonable attempt to complete our knowledge in these respects by further exploration. After the signal manifestations which have been given by men of science throughout the world, of their estimate of the importance of circumpolar discovery; and with the advantage of recent reports, from a high latitude, received from our lamented fellow-member, the late Dr. Kane, whose efforts were accompanied by warm solicitude on the part of the Society, your committee have believed it proper to confine themselves to a consideration of the grounds upon which Dr. Hayes rests his conviction of the practicability and seasonableness of his proposal. These have been already briefly submitted to the American Association for the Advancement of Science, and have received a very prompt acceptance by that body, the members of which referred the subject to a committee, with instructions to coöperate with Dr. Hayes. They have been also published through the Smithsonian Institution, at an invitation from which, Dr. Hayes announced them in one of the lectures of its last course. Nevertheless, your committee think proper to mention the principal of them as forming the basis of their own conclusion, that the proposal in question is sustained by sufficient evidence of its feasibility to engage the continued attention of the Society.

It is well known that one result of voyages of exploration prior to that of Dr. Kane, was the establishment of an opinion that a barrier of ice

surrounded the Pole; and that in order to reach open water, if such existed, a way must be found through, or over the barrier. Dr. Kane, after an intelligent consideration of the discoveries already reported, aided by the illustrations derived from his personal observation during his first visit to the arctic circle, concluded, that the most practicable course lay up Smith Strait, which he accordingly followed upon his second voyage. The difficulties encountered by him were such, that, after many gallant efforts, he was compelled to return to the United States without becoming an eye-witness to the physical condition of the region towards which his labors tended. It seemed therefore proper for your committee to inquire whether those difficulties were clearly of so constant a nature in relation to all similar attempts, as to render it prudent on the part of the Society to avoid encouragement of a project which his experience may have shown to be impracticable. It appears that the most important impediments to his complete success were

1st. The arresting of his vessel and her permanent confinement by the ice, in a situation which was unfavorable to the efforts of his exploring parties. This occurred in a bay to the south of Kennedy Channel, with an exposure to the main pressure of ice, which accumulated in hummocks on the north of his position; and thus the labor necessary to any exploration towards the Pole, was in disproportion to the strength of his crew, and the resources at his command. On the west side of the channel, under the cover of the projecting land visited by Dr. Hayes (to the most prominent point of which the name Cape Frazer was given), the ice is reported as free from the impediments above stated; and a good harbor is reported to exist for wintering a ship, with egress by the opening of the channel, or through leads in the ice during the arctic summer. The account published by Dr. Kane, shows how large a proportion of the sufferings and disappointments of his exploring parties was due to the position into which he was forced.

2d. The want of fresh provisions. The unavoidable delay of Dr. Kane's departure from New York beyond the period proposed by him, prevented his collecting, near the Danish settlements in Greenland, the fresh stores which abound in that neighborhood. Originally contemplating a single year's work, he was detained beyond his expectation, with scanty supplies, until his men, worn out by excessive labor, and restricted mainly to a salt diet, became the victims of fearful assaults of scurvy. His narrative shows how much of his disappointment is due to this cause. His dogs, indispensable auxiliaries, were unable to subsist upon salted meats; and thus the entire stress of the work fell upon an ill-conditioned ship's company. Dr. Hayes proposes to give two years to his exploration. The first of these he designs to employ in reaching his head-quarters at or near Cape Frazer; and in establishing thence northward, on the west side of Kennedy Channel, secure depôts of provisions, as far as the latitude assigned by Morton to the open water reported by him, or further, if necessary; and in explorations preliminary to the main attempt. The second year, or such portion of it as may be sufficient, Dr. Hayes appropriates to the ascertainment of the condition of the polar adjacencies, and to such observations as may be most important to science. Thus the expedition of Dr. Kane, which may seem to discourage further attempts in the same direction, is viewed by Dr. Hayes as really furnishing the knowledge which promises final success. Your committee concur in this view.

In such circumstances, your committee cannot doubt that it is proper or the American Philosophical Society to coöperate with Dr. Hayes, in

such manner as may be conformable with its usages in like cases; and especially to give to him the benefit of such systematic instruction as may best further the general purpose of the Society in the discovery and diffusion of useful knowledge.

Your committee respectfully submit the following resolution:—

Resolved, That a committee of nine members of the Society be appointed to coöperate with Dr. Hayes in his proposed extension of arctic exploration, and to give to him, on the part of the Society, such instructions as may best promote its objects.

All of which is perfectly submitted.

WM. PARKER FOULKE,	}	<i>Committee.</i>
STEPHEN COLWELL,		
R. E. ROGERS,		
WM. S. W. RUSCHENBERGER,		

The resolution accompanying the report was adopted, and the presiding officer authorized to appoint the committee, and announce it at a future meeting.

STATED MEETING, MAY 6, 1859.—The following named members were appointed a committee to coöperate with Dr. I. I. Hayes in further arctic exploration:—

WM. PARKER FOULKE, Esq., Prof. ROBERT E. ROGERS, ISAAC LEA, Esq., Dr. JOHN L. LECONTE, Prof. E. OTIS KENDALL, Prof. J. P. LESLEY, Rev. ALBERT BARNES, D.D., Hon. EDWARD KING, Prof. J. C. CRESSON.

THE ACADEMY OF NATURAL SCIENCES OF PHILADELPHIA.

[From the "Proceedings" of the Academy for 1858.]

MEETING OF THE ACADEMY, May 11, 1858.—The following resolutions were adopted:—

Resolved, That the Academy has heard with great interest the communication of Dr. Isaac I. Hayes, of his purpose to attempt a further exploration of the arctic regions:

Resolved, That the Academy will hereafter give to Dr. Hayes such recommendations respecting the objects proposed by him, as shall be deemed most likely to promote the objects of the Academy:

Resolved, That a committee of seven be appointed to cooperate in behalf of the Academy with Dr. Hayes.

The committee was then appointed as follows:—

Prof. JOHN F. FRAZER, Dr. T. B. WILSON, ISAAC LEA, Esq., WM. PARKER FOULKE, Esq., Dr. J. L. LECONTE, Prof. JOS. LEIDY, Dr. WILLIAM S. W. RUSCHENBERGER, U. S. N.

Subsequently, on motion, ELIAS DURAND, Esq., and Prof. JOSEPH CARSON, were added to the committee.

MEETING OF THE ACADEMY, JULY 6, 1858.—On leave granted, the committee appointed to confer with Dr. Hayes in regard to his proposed Arctic Exploration, presented a Report as follows:—

That the exploration contemplated by Dr. Hayes appears to deserve the encouragement of all individuals or societies who possess an interest in the advancement of science, and especially of those who cultivate the various branches of Natural History, for the following reasons :

1st. The interesting problem of the existence of an open Polar Sea cannot as yet be considered as satisfactorily solved ; as is made manifest by the doubts recently expressed by a distinguished geographer, in a memoir read before the Royal Geographical Society of London. Yet this problem is so intimately connected with theories of climate, not only in that region, but over a large portion of the northern hemisphere, that its definite solution must be considered as of the utmost importance to the study of geography ; and it is not impossible that its investigation may lead to valuable results of a more commercial nature. It seems probable, therefore, that this subject will attract the attention of other nations, who are engaged in an honorable rivalry with us in promoting the knowledge of the surface of the earth, and it is highly desirable that the credit of furnishing the definite solution should belong to the nation to whose energy and enterprise the interesting results already obtained are due.

2d. The natural history of this extensive region remains, as yet, almost entirely unknown ; while, from the peculiarities of its climate, and its proximity to the land of the eastern hemisphere, it seems certain that much valuable information as to the habits of animals and plants, and the connection of our Faunas and Floras, both ancient and modern, with those of Europe and Asia, may be gained by such an exploration as is here contemplated.

3d. The excessive difficulties and hardships of such an exploration serve to deter any but the most adventurous spirits from undertaking it ; while the peculiar circumstances under which both the instruments of observation and the observers themselves are placed, render a frequent repetition of the observations necessary to produce confidence in the results. Every encouragement should, therefore, be extended to all who are willing to undertake the arduous task, and capable of properly meeting its unusual responsibilities.

The committee therefore recommend to the Academy the adoption of the following resolutions :—

Resolved, That the Academy of Natural Sciences of Philadelphia, having full confidence in the energy, prudence, and scientific capacity of Dr. Hayes, recommends the arctic expedition projected by him to the favorable consideration of all who are in a position to assist him in his enterprise, believing that its success will contribute largely to the advancement of science and to the honor of our country.

Resolved, That the Academy will cheerfully assist Dr. Hayes, in carrying out his plans, by all means in its power.

JOHN F. FRAZER,	}	<i>Committee.</i>
T. B. WILSON,		
ISAAC LEA,		
WM. PARKER FOULKE,		
J. L. LECONTE,		
JOSEPH LEIDY,		
WM. S. W. RUSCHENBERGER,		
E. DURAND,		
JOSEPH CARSON,		

The report and resolutions were adopted, and the committee continued."

THE AMERICAN ACADEMY OF ARTS AND SCIENCES, OF BOSTON.

[From the "Proceedings" of the Academy for 1858.]

MONTHLY MEETING, OCTOBER 12, 1858.—Professor Joseph Lovering, in behalf of the committee to whom was referred the communication of Dr. I. I. Hayes, dated July 19th, 1858, requesting the counsel and favorable influence of the Academy, in his proposed attempt to reach the north pole of the earth, read the following report:—

The announcement of an open sea within the Arctic Ocean was made in these words by Dr. Kane after the return of his man Morton from a sledge excursion in June, 1854: "It must have been an imposing sight, as he stood at this termination of his journey, looking out upon the waste of waters before him. 'Not a spec of ice,' to use his own words, 'could be seen.' There, from a height of four hundred and eighty feet, which commanded a horizon of almost forty miles, his ears were gladdened by the novel music of dashing waters, and a surf, breaking in among the rocks at his feet, stayed his further progress."

The committee have quoted the eloquent language of Dr. Kane, without stopping to inquire how much of this glowing description is to be referred to the enthusiasm of an explorer, and how much is to be interpreted by a cool criticism at a distance from the scene of operations.

The question which, it is expected, may be settled by another arctic expedition is, whether the great ice-barrier, which on some meridians, and at some seasons, encroaches even upon the 48th parallel of latitude, and which invests an area of six millions of square miles, extends northward to the Pole; or whether, beyond the limits of extreme arctic navigation, which leaves an unexplored surface of three millions of square miles, there lies imprisoned in a zone of ice, the unfrozen waters of a polar sea. The conclusion of Dr. Kane, that the latter was the true side of the alternative, was anticipated by that of a Russian expedition, on sledges, in 1810, made upon an opposite meridian to that which Kane traveled, and of Parry, in 1827, upon a third meridian.

The impression favorable to an open and navigable polar sea, which was obtained on these occasions, based as it was upon a very circumscribed experience, and prevented by stress of circumstances from being pursued to verification, might seem to fall considerably short of a rational belief, were it not, in the opinion of Dr. Hayes and others, corroborated by various kinds of circumstantial evidence, as follows:—

1. By the presence of bird-life, mostly marine, on what would be the icy shores of this suspected sea, and which migrate northward in spring.

2. By the milder temperature at extreme latitude, inferred from the character of the isothermals where best determined; and which, pursued by analogy to unvisited latitudes, give the same temperature to the high latitude of 90° as to the arctic circle.

3. By the migrations of human life; the traditions of the Esquimaux, pointing to the north as the cradle of their race. If the fact is established, that races deteriorate as they remove from the parallel of their nativity, then the tradition of the degenerate Esquimaux is confirmed by their own degeneracy.

4. By the temperature of the arctic waters, which were observed by William Morton, and recorded by Kane, as only 36° Fahr. in June, 1854, or two degrees above the temperature of the air at the same time; the water flowing from the north and no ice being in sight. Whether this water is frozen in winter, is not, however, known.

5. By the rise of the temperature in winter when the north wind sets in, which is also damp; as observed by Baron Von Wrangel and Sir Edward Parry. The cause of this elevated temperature in the arctic waters, Dr. Hayes thinks, may be found in the influence of the Gulf Stream flowing northward as an under-current to equalize the effects of superficial flow southward. This direction in the flow of the deep water, is inferred from the drift of the deeply-laden icebergs northwards, while the lighter ones move southward. Moreover, what compensation for astronomical exposure may not the drainage of five millions of square miles from the northern water-sheds of Europe, Asia, and America, introduce into the temperature of the great arctic basin?

If these mild waters, embosomed for centuries in a zone of ice, are to be reached by civilized man, Dr. Hayes thinks that the best invitation to success comes, not from a purely nautical expedition along the easterly coast of Greenland, but from more westerly meridians, to be traversed by boats and sledges.

The committee do not feel called upon to examine, singly or collectively, the force of these various arguments in favor of an open polar sea. It is certain, however, that human curiosity will not be satisfied until the mystery on this subject is cleared up by new expeditions. To postpone these expeditions to another generation, when much of the personal experience already gained will have been forgotten, and when the services of those best qualified to conduct them can no longer be commanded, would not be a wise economy.

With these few hints on the views and objects of Dr. Hayes, in his appeal to the Academy for scientific aid and sympathy, your committee conclude with the recommendation of the following resolutions:—

Resolved, That the American Academy of Arts and Sciences appreciate highly the laudable ambition of Dr. I. I. Hayes, to continue, and, if possible, consummate, the arduous exploration for which he has already sacrificed much, and is willing to sacrifice still more; and that the Academy tender him their sympathy and influence.

Resolved, That a committee of seven be appointed, from the members of the academy, to co-operate with Dr. I. I. Hayes, and to render him such scientific counsel as may make his new effort, if undertaken, secure the greatest advantages to science and humanity.

JOSEPH LOVERING, }
HENRY L. EUSTIS, } *Committee.*
JOSEPH WINLOCK, }

On motion of Professor FELTON, the resolutions were adopted unanimously, and the subject was referred to a committee, consisting of—

Prof. JOSEPH LOVERING, Prof. HENRY L. EUSTIS, Prof. JOSEPH WINLOCK, THOMAS G. CAREY, Esq., BENJAMIN A. GOULD, Esq., Prof. THEOPHILUS PARSONS, EDWARD WIGGLESWORTH, Esq.

THE BOSTON SOCIETY OF NATURAL HISTORY.

[From the "Proceedings" of the Society, for 1858.]

MEETING OF THE SOCIETY, NOVEMBER 3, 1858.—The committee to whom was referred the letter of Dr. I. I. Hayes, announcing his intention of making another attempt to reach the north pole of the earth, would report:—

1. That we regard the proposed expedition with no ordinary interest;

and receive assurance that it will be successfully prosecuted, in view of the near approaches which have already been made in that direction; the reasons by which it is shown that the obstacles hitherto encountered may be, in a great measure, evaded; the personal experiences of its conductor of the dangers and rigors to be met, and his ability to forestall them; and, especially, in his acquaintance with the residences and characters of the natives, on whom he must mainly rely for extra aid,—an acquaintance, probably, superior to that of any other person.

2. That while the hopes of former expeditions may not have been fully realized, yet, that in view of the additions made to human knowledge, as to the Meteorology, Geography, and other natural features of our globe, as well as the proofs they have given of the physical endurance, perseverance, and moral energies of our race, enough has been attained to entitle them to be considered as anything but unsuccessful; and that we anticipate similar results from this,—results in no way inferior to those attaching to previous expeditions.

3. That whatever of encouragement or countenance can be derived from this Society, we wish to tender to Dr. Hayes, assuring him that our best wishes will accompany him; and of our confidence that his return will be fraught with fruits most valuable to science.

All which is respectfully submitted.

AUGUSTUS A. GOULD,
SAMUEL KNEELAND, Jr., } *Committee.*
THEOPHILUS PARSONS,

The report and accompanying resolutions were accepted and adopted as the sense of the Society, and the corresponding secretary was directed to communicate a copy of the same to Dr. Hayes.

THE NEW YORK LYCEUM OF NATURAL HISTORY.

[Meeting of the Lyceum, December 28th, 1858.]

The committee appointed to prepare resolutions in reference to the proposed Expedition of Dr. Hayes to the Arctic Sea, reported:—

That notwithstanding the many expeditions that have explored different positions of arctic America, much yet remains to be learned, respecting the Physical Geography and Zoölogy of those regions; and Dr. Hayes having at our last meeting given an outline of his contemplated explorations, we cannot, as Naturalists, but feel a hope that in the prosecution of his project, much valuable information may be obtained to perfect the knowledge we now have of the productions and zoölogy of the extreme north.

On this account it seems proper that some expression of interest should be manifested, and encouragement given him by all scientific societies, and we therefore recommend the adoption of the following resolutions:—

Resolved, That the Lyceum of Natural History in New York cordially approves of the plan proposed by Dr. Hayes, and with the expectation that if he succeeds in reaching a higher arctic parallel than has heretofore been attained, some valuable contributions to science may reasonably be expected; and the Lyceum therefore fully unites in the recommendations of his project by other societies, and willingly adds its influence, with the hope

that all interested in scientific research, and having the ability, will aid him in his self-sacrificing design.

Extracted from the Minutes.

JOHN REDFIELD, *Corresponding Secretary.*

THE ROYAL GEOGRAPHICAL SOCIETY OF LONDON.

[From the "Proceedings" of the Society for 1858.]

MEETING OF THE SOCIETY, JUNE 14th, 1858.—The President, Sir RODE-
RICK IMPEY MURCHISON, said: I ought to mention, to the honor of our
kinsmen on the other side of the Atlantic, that, not content with having
done so much in search of Franklin, they now, on the proposal of Dr.
Hayes, the companion of Kane, contemplate a further expedition to ascer-
tain whether there is or is not an open sea beyond Smith Sound. As geo-
graphers we cannot too warmly thank them for the spirit they have dis-
played in this arctic subject.

LETTER FROM M. DE LA ROQUETTE,

Vice-President of the Geographical Society of Paris.

To Mr. E. R. Straznicky, Secretary of the Council of the American Geographical and
Statistical Society, New York.

PARIS, Friday, January 21, 1859. }
19 Rue Mazarine. }

SIR:—It is with the liveliest interest that I have read the numbers of
the "New York Tribune" (Dec. 6), "Evening Post" (Dec. 17), and "New
York Times" (Dec. 18), which you have had the kindness to transmit to
me. They apprise me of the new organization of the American Geogra-
phical and Statistical Society, and at the same time of the fact, that, upon
the proposition of Dr. Hayes, one of the companions of the heroic and
unfortunate Dr. Kane, your Society has adopted, in concert with other sci-
entific institutions of the United States, the project of sending out a new
expedition into the arctic regions, for the purpose of ascertaining the cor-
rectness of the information furnished by the latter, particularly as to the
existence of an open Polar Sea, that is to say, free from ice, which would
either approach the Pole, or extend to that extremity of our globe which,
up to the present day, navigators have made vain efforts to reach.

From the resolution adopted by the American Geographical and Statis-
tical Society, I perceive that the expedition will probably leave in the spring
of 1860, under the command of Dr. Hayes, its promoter, and that its expenses
will be covered by means of a subscription. The attachment which I have
always felt for Dr. Kane, and which he kindly shared, and the honor which
your learned Society has done me by electing me as their Honorary Mem-
ber, leaves me ground to hope that they will allow me to place my name
among the number of subscribers with a sum of five hundred francs, which
I hold for their disposition.

I have already announced to the Geographical Society of Paris the truly
national project conceived by the United States. I will profit by the new
information contained in the numbers of the papers which I owe to your
kindness, and will draw up a detailed account, which will probably appear
in the "Nouvelles Annales de Voyages." I shall always receive with grati-
tude the communications which you will be kind enough to make to me.

* * * * *

Allow me to express to you, Sir, the assurance of my most distinguished
consideration.

DE LA ROQUETTE,
No. 19 Rue Mazarine.



NOTE.

Temperature of surface water denoted thus 30
Temperature of water at the depth in fathoms 30 (120)
Prevailing direction of the Oceanic Current
Proposed track of the American Polar Expedition

NOTE.

Approximate outline of drift ice denoted thus
Approximate outline of historic impenetrable ice
Probable area of the open Polar Sea in the Summer
Limit of Arctic Water Sheds

Eng. by W. Smith.
Bowen & Co. Lith. Philad.